



# Utah Department of **NATURAL RESOURCES**

## FOR IMMEDIATE RELEASE

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### **Drought Update for the Week of August 2**

**Salt Lake City** (August 4, 2021) – Almost all the state is still in [extreme drought](#) despite precipitation totals significant enough to cause severe flooding in some areas. Utah relies most heavily on snowpack for its water – however, rain and snow both play essential roles in recovering from the drought.

“Recent monsoons have soaked many parts of the state. This much-needed rain has helped reduce wildfire risk and temporarily improve soil moisture and streamflows. The storms have not, however, pulled us out of this drought,” said Utah Department of Natural Resources Executive Director Brian Steed. “Hopefully, steady rain and snow will continue into this winter when it will have the most significant impact on drought conditions.”

The monsoons never showed up the last two years, which led to record-dry soils and inefficient runoff. Recent storms have also reduced demand, with many Utahns turning off sprinklers and letting Mother Nature water their landscapes.

The following [drought](#) impacts from the week of Aug. 2 are compiled by the Utah Divisions of [Water Resources](#), [Water Rights](#), [Wildlife Resources](#), [State Parks](#), the [Department of Environmental Quality](#) and the [Department of Agriculture & Food](#).

### **At-a-glance changes for the week:**

- Storms have not improved reservoir storage, with the statewide average dropping to 53% (down from 55% last week). **Thirty-two of Utah’s largest 42 reservoirs are below 55% of available capacity.** Utah Lake and East Canyon dropped below 55%.
- Many streamflows have increased with monsoon rains, with just 54 of the 97 measured streams flowing below normal compared to 72 last week. Daily flow from 28 headwater streams is slightly above the previous maximum daily flow record due to significant monsoonal precipitation over the last week. Cumulative runoff from those same streams



remains below the previously recorded minimum at about half of average since October 1, 2020.

- Hay supplies and rangeland conditions continue to be an issue for farmers and ranchers, with 77% of hay and roughage supplies rated as short or very short and 69% of pasture and rangelands rated as poor to very poor.
- Nine boat ramps are currently closed at seven state parks, including two new closures at Jordanelle (Rock Cliff and Ross Creek). Other closures include Antelope Island, Echo, Millsite, Piute, Willard Bay and Yuba. Caution advisories have also been issued for seven additional state park boat ramps. View conditions [here](#).
- Stormwater runoff from heavy rainstorms can cause fecal waste to enter recreational waters. Water recreators are advised to take the following precautions: avoid swimming in recreational waters 48-72 hours after a significant rainstorm; avoid swallowing water while swimming; wash hands with soap and clean water before and after swimming, water-skiing, or playing in the water or sand. Recreators who experience diarrhea, vomiting, nausea, abdominal pain, fever or rash should report the illness to their local health department.
- Residents should remove any trash or debris from their curbs and gutters to prevent storm drain blockages and river, stream and lake pollution.
- While rain may result in water mixing that can help reduce the magnitude of blooms, precipitation and flooding may also increase nutrient runoff in water bodies, creating more algal blooms. The public is encouraged to call (801) 536-4323 if they see anything suspicious. Current state-wide HAB status can be found [here](#).

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## **FULL REPORT: WEEK OF AUGUST 2**

### **Public Water Systems**

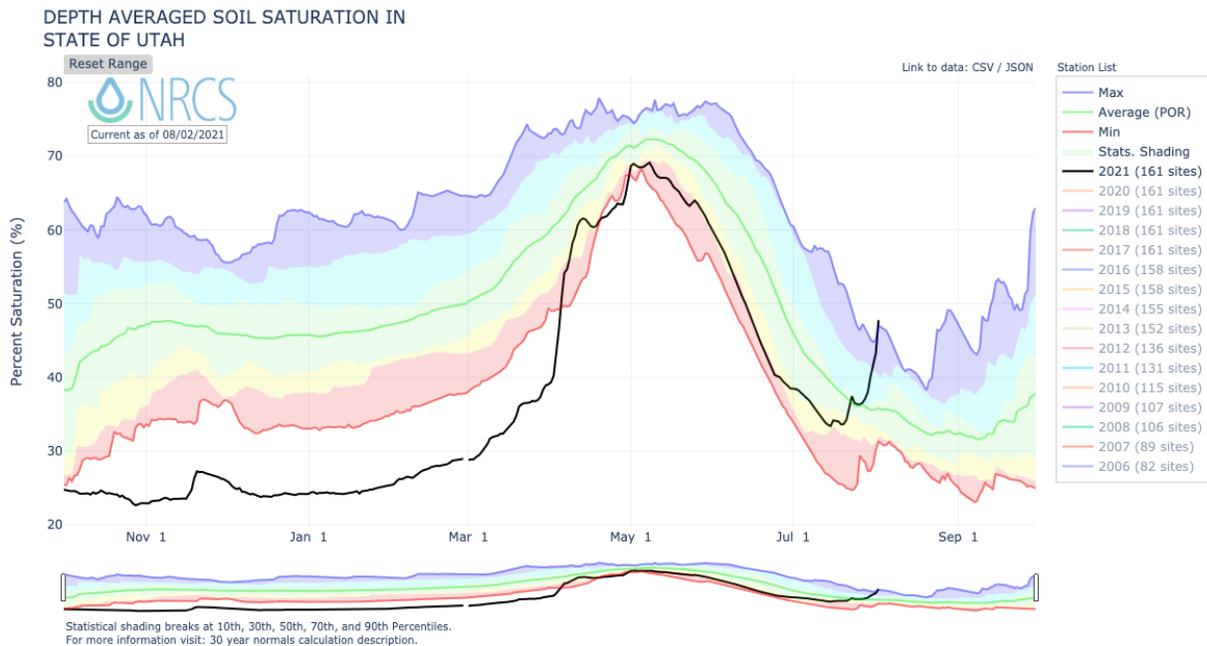
- Echo Mutual: The Division of Drinking Water (DDW) is working closely with the town of Echo to ensure their short-term drinking water needs are met through water hauling from Weber Basin. DDW is also working with the town to determine strategies that will ensure their system is more resilient to drought in the future
- Scofield Reservoir: Scofield Reservoir remains under Danger Advisory for harmful algal blooms. The Southeast Utah Health Department continues sampling for cyanotoxins weekly. No issues have been found to date.
- Drought Guidance for Public Water Systems: DDW has released guidance for public water systems as they navigate water shortages and water quality issues due to drought. The guidance can be found [here](#).

### **Precipitation and soil moisture**

- Precipitation accumulation (as measured at NRCS SnoTel sites) continues to be well below average. To restore conditions to “average” for the year, Utah still needs about 12 inches of rain: 8.5 inches to cancel the deficit and 3.5 inches to account for the precipitation traditionally accumulated from August through September.
- To get streams running at healthy levels while filling reservoirs, Utah needs late summer and early fall storms to return soil moisture levels to normal, which will help snowpack

runoff make it to streams and reservoirs rather than get absorbed by dry soils. The state also needs an above-average snowpack to refill reservoirs.

- Air temperatures for the week were 0.4 degrees Fahrenheit above average.
- Overall (mountain and valley locations), the state has seen 62.4% of the precipitation typically received in a normal water year (Oct. 1 through Sept. 30).
- Soil moisture saw a significant increase due to rainstorms around the state. It is 0.7% above the maximum for this water year. Wet soils are critical in the fall as the state begins to accumulate its winter snowpack. As seen in the chart below, significant increases and decreases in soil moisture are typical for late summer.



*Much of the state has seen rain, as evidenced by the spike in the state soil moisture sensors (found at mountain [SnoTel sites](#)). On July 15, the state's daily average soil saturation was at 33.4%, and just 18 days later (August 2), the daily average was 47.8%, which is above the previous daily maximum. Healthy soil moisture levels allow snowpack runoff to enter the streams and reservoirs rather than get absorbed by dry soils. The last two years, monsoonal patterns never occurred, leading to record dry soils in October 2020 and throughout the winter (which are reflected in the graph above).*

## **Streamflows**

Streams statewide continue to flow at less than 50% of normal.

- Fifty-four (72 reported last week) of Utah's 97 streams reporting data are flowing below normal, which is 18 less than the previous week.
- Three streams are flowing at their lowest levels ever recorded, roughly half as many as last week.
- Daily flow from 28 headwater streams is currently flowing slightly above the previous maximum daily flow record.

## **Reservoir and Lake Levels**

About 95% of Utah's water comes from snowpack. This statewide average ranges from around 75% in the southwest corner to over 95% in the northern part near the Weber Basin headwaters. Different-sized reservoirs are located throughout the state to catch and store runoff. Small reservoirs store about one year's worth of water, while larger reservoirs, like Strawberry or Jordanelle, store several year's worth. Reservoir storage helps to prevent water shortages and is dependent on snowpack and runoff.

- The capacity of major reservoirs statewide dropped another 2% this week compared to last week. Current storage is 53%.
- Thirty-two of Utah's largest 42 reservoirs are below 55% of available capacity. Utah Lake and East Canyon both dropped below 55%.
- The Great Salt Lake's current elevation has held steady for the past week at 4191.2, likely due to reduced upstream demand and cloud cover that reduced evaporation. Lake levels are expected to continue dropping until irrigation season concludes, evaporation slows down, and more water flows into the lake.

## **GREAT SALT LAKE ELEVATION**



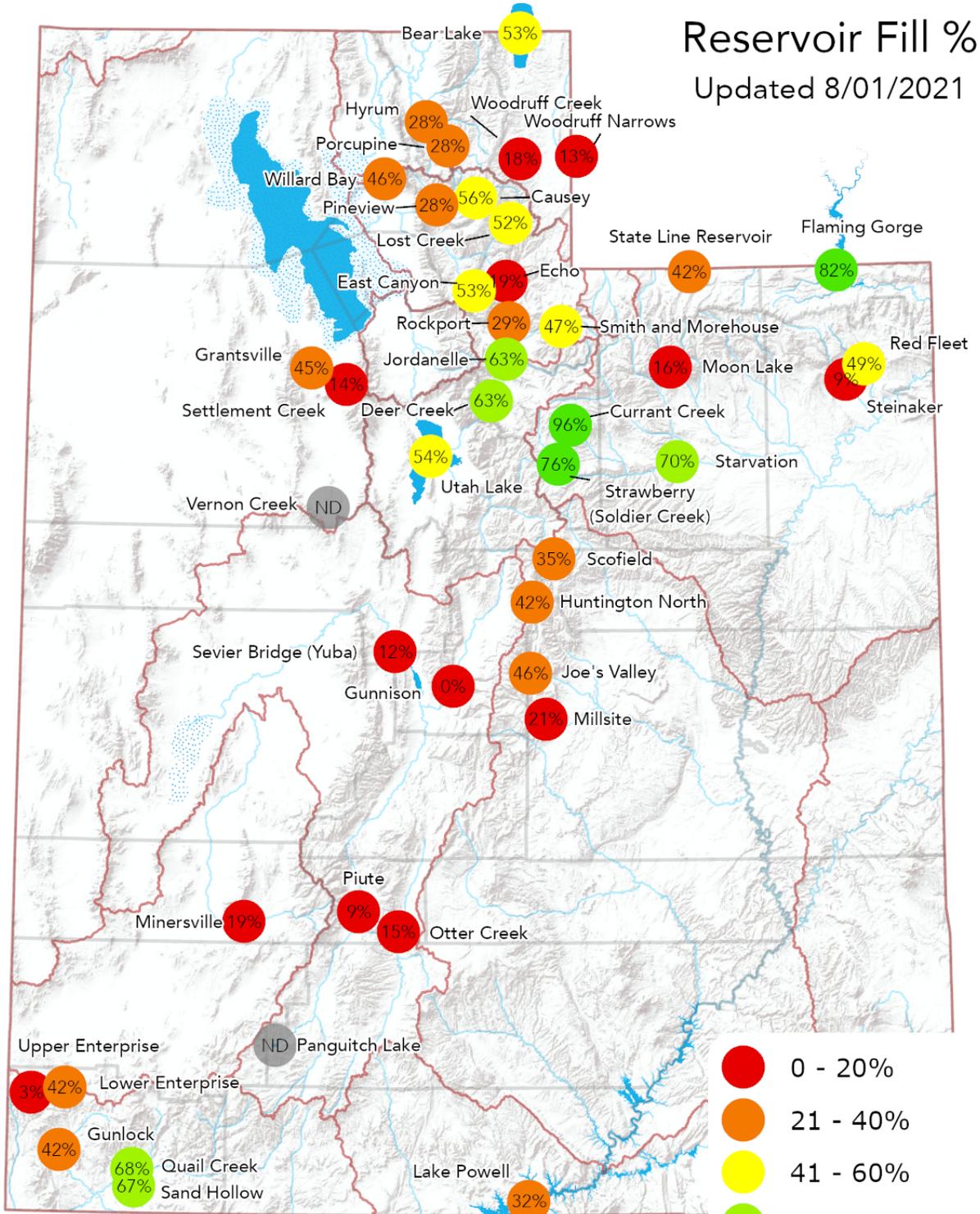
RECORD HIGH  
**4211.65 FEET**

AVERAGE  
**4202.2 FEET**

**NEW RECORD LOW** CURRENT  
**4191.2 FEET**

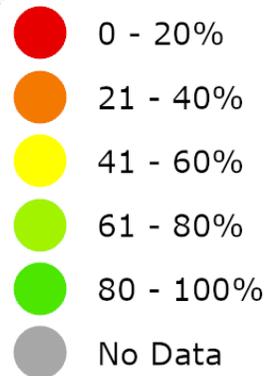
# Reservoir Fill %

Updated 8/01/2021



### Data Sources

Bureau of Reclamation, Bear River Commission,  
 Emery Water Conservancy District,  
 Sevier River Water Users Association,  
 Washington County Water Conservancy District



## **Drought Effects on Priority Distribution of Water Rights in Utah (updated August 2)**

Water rights are distributed by the state engineer with priority going to the earliest rights. For example, a water right established in 1889 is entitled to receive its full flow before water rights established in 1890 or later can receive any water. This principle is called the “Prior Appropriation Doctrine” or “first in time, first in right.” The earliest water rights in Utah are called “direct flow” rights, meaning they cannot be stored. Storage reservoirs were built later on so storage rights generally have priority dates later than direct flow rights, although some “high” water rights (direct flow rights with late priority dates) exist.

While some water rights are owned by public water suppliers, others are held by individuals like farmers and ranchers. Priority distribution happens every year, not just during droughts, and occurs irrespective of the type of use. Most water rights are fully or partially curtailed by mid-summer when the natural flow of a stream drops following spring runoff. The term “natural flow” refers to the total supply of a stream, which is generally different from the flow of the stream at any particular point.

Natural flow on complex systems is determined using accounting models developed by the Division of Water Rights. When the natural flow is greater than 100% of the direct flow rights, water can be stored on the system. When the natural flow drops below 100% of the direct flow rights, these rights are reduced according to priority date. Storage, if available, can be released to make up all or part of the deficit. The amount of storage available on each system is a function of the specific projects developed on the system over the last hundred-plus years. This year has seen an early decrease in natural flow because of very little spring runoff. In previous years systems were generally storing water in mid-June, sometimes in considerable amounts, while 2021 is already seeing some of the earliest water rights being curtailed.

While statewide there are many different river systems, the information below highlights water rights priorities, natural flow and direct flow on just four of them. CFS below stands for cubic feet per second.

**Middle Bear River** – Priorities: Direct Flow (1860 - 1909), Storage (1911), High Rights (1914 - 1989)

<i>Date</i>	<i>Priority from River</i>	<i>Natural Flow</i>	<i>% Direct Flow Rights</i>
Aug 1, 2019	1909	1,130 cfs	81%
Aug 1, 2020	1909	1,026 cfs	74%
Aug 1, 2021	1889	327 cfs	23%

- The water supply on the Logan River, tributary to the Middle Bear, is the third lowest on record out of 58 years (1977 and 1992 were lower) according to the CRBFC Water Supply Forecast (Station LGNU1).
- Currently, only 23% of the direct flow water rights are being met with the earliest priority rights being fulfilled from 1860 to 1889.

**Upper Provo River** – Priorities: Direct Flow (1<sup>st</sup> Class - 17<sup>th</sup> Class), Storage

<i>Date</i>	<i>Priority from River</i>	<i>Natural Flow</i>	<i>% Direct Flow Rights</i>
Aug 2, 2019	60% 1 <sup>st</sup> Class	92 cfs	20%
Aug 2, 2020	40% 1 <sup>st</sup> Class	62 cfs	14%
Aug 2, 2021	40% 1 <sup>st</sup> Class	62 cfs	14%

- The water supply on the Provo River at Hailstone is the third lowest on record out of 67 years (1977 and 1961 were lower) according to the CRBFC Water Supply Forecast (Station PVHU1).
- Currently, only 10% of the direct flow water rights are being met, consisting of only 30% of 1st Class rights.

**Upper Duchesne River – Priorities: Direct Flow (1900 - 1964), Storage (1964)**

<i>Date</i>	<i>Priority from River</i>	<i>Natural Flow</i>	<i>% Direct Flow Rights</i>
Aug 1, 2019	Storage	691 cfs	62%
Aug 1, 2020	1912	259 cfs	23%
Aug 1, 2021	1910	226 cfs	20%

- The water supply on the Duchesne River at Randlett is the second-lowest on record out of 79 years (1977 was lower) according to the CRBFC Water Supply Forecast (Station DURU1).
- Currently, only 20% of the direct flow water rights are being met with the earliest priority rights being fulfilled from 1900-1910.

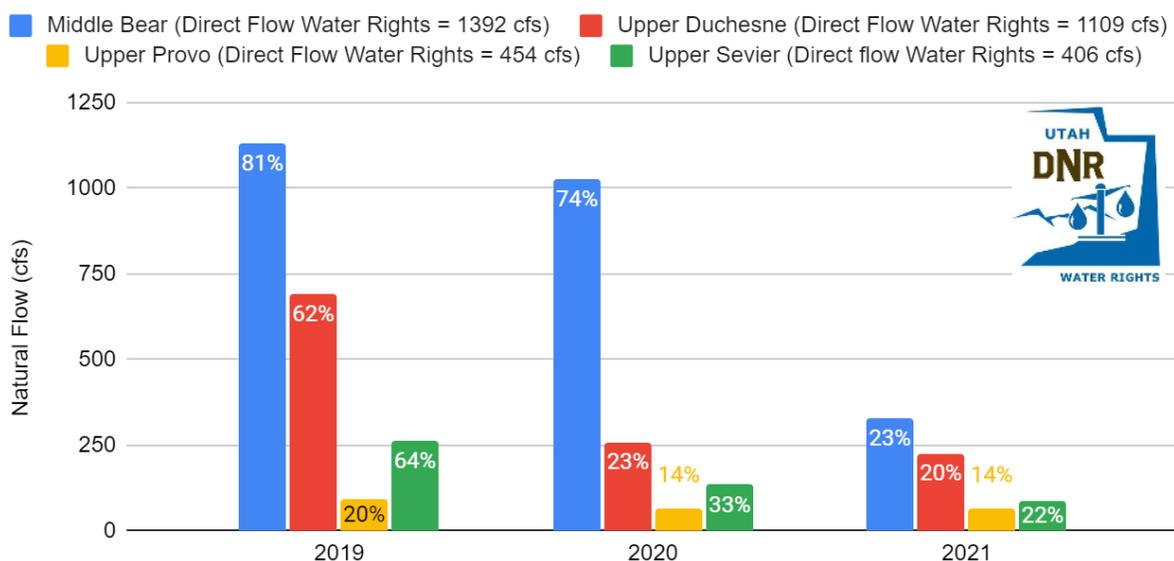
**Upper Sevier River – Priorities: Direct Flow (1<sup>st</sup> Class – 3<sup>rd</sup> Class), Storage**

<i>Date</i>	<i>Priority from River</i>	<i>Natural Flow</i>	<i>% Direct Flow Rights</i>
Aug 1, 2019	88% 1 <sup>st</sup> Class	261 cfs	64%
Aug 1, 2020	45% 1 <sup>st</sup> Class	134 cfs	33%
Aug 1, 2021	29% 1 <sup>st</sup> Class	88 cfs	22%

- The water supply on Salina Creek is the 3rd lowest on record out of 58 years (1977 and 2018 were lower) according to the CRBFC Water Supply Forecast (Station SAYU1).
- Currently, only 22% of the direct flow water rights are being met, consisting of only 29% of 1st Class rights.

**Natural Flow Distribution on Four River Systems (Aug 2)**

Percent Values Greater than 100 Indicate Water Being Stored



## **Well Replacements**

In addition to surface water rights, the state engineer oversees the appropriation of groundwater and construction of groundwater wells. As groundwater conditions change, well owners may need to replace their well. This may be due to issues with the existing well, or the need to drill deeper. When this happens a water user files either a replacement or renovate application. In some cases, a change application may need to be filed. This is dependent on the individual status of the user's water right.

- Seven new replacement well and well-deepening applications were filed in the last week. The total number of replacement and deepening requests this year is 95 statewide.
- As a comparison, there were 113 in 2020 and 102 in 2019. The average annual count during the past five years is 107.